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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,259	02/26/2002	Takashi Sato	4034-8	3640
23117	7590	12/16/2003	EXAMINER	
NIXON & VANDERHYE, PC 1100 N GLEBE ROAD 8TH FLOOR ARLINGTON, VA 22201-4714			DI GRAZIO, JEANNE A	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 12/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/082,259	Applicant(s) SATO ET AL.	
	Examiner Jeanne A. Di Grazio	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Priority to Japanese Patent Application No. 2001-051398 (Feb. 27, 2001) is claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 7, 9, and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Assouline et al. (US 4,088,400) in view of Eberhardt (US 4,229,783).

Per claims 1, 2, 4, and 9: Assouline has a display element including a liquid crystal layer (Figure 1, plate 3, column 2, lines 21-25), and at least one polarizer including a front polarizer (Figure 1, polarizer 22); a light diffusing element, which is disposed in front of the display element (Figure 1, diffuser 4); and a polarizing element, which is disposed in front of the light diffusing element (Figure 1, polarizer 23) wherein the light diffusing element (4) is located between the front polarizer (22) and the polarizing element (23) all of which are located in front of the liquid crystal layer (3), and wherein an absorption axis of the polarizing element is substantially aligned with an absorption axis of the front polarizer (the polarizers are aligned with each other in Figure 1). Assouline furthermore includes a rear polarizer (Figure 1, polarizer 21) included in the at least one polarizer, said rear polarizer being located on a rear side of the liquid crystal layer (Figure 1). In Assouline, the rear polarizer (Figure 1, polarizer 21) is united with the display.

Assouline does not appear to explicitly recite a backlight; however, Eberhardt has a backlight for an electrooptic display such as a liquid crystal display that serves to diffuse and distribute light from a point source over a broad, flat, thin area thus providing backlighting for the display and for providing light when ambient light is insufficient (ABS, column 1, lines 26-46, entire patent).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Assouline in view of Eberhardt to provide a backlight into a reflective or transmissive display that can (1) provide backlighting to the display when ambient light is insufficient, and (2) to diffuse and distribute light from a point source over a broad, flat, thin area as noted.

Per claims 7 and 10: Assouline has a display element that outputs polarized light (Figure 1, plate 3, column 2, lines 21-25, and column 1, lines 13-29), a light diffusing element (Figure 1, diffuser 4), which is disposed in front of the display element; and a polarizing element (Figure 1, polarizer 23), which is disposed in front of the light diffusing element; and wherein an absorption axis of the polarizing element is defined so that substantially all of the polarized light that has been output from the display element is transmitted through the polarizing element (column 4, lines 22-24, entire patent).

Assouline does not appear to explicitly specify a backlight; however, Eberhardt has a backlight for an electrooptic display such as a liquid crystal display that serves to diffuse and distribute light from a point source over a broad, flat, thin area thus providing backlighting for the display and for providing light when ambient light is insufficient (ABS, column 1, lines 26-46, entire patent).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Assouline in view of Eberhardt to provide a backlight into a reflective or transmissive display that can (1) provide backlighting to the display when ambient light is insufficient, and (2) to diffuse and distribute light from a point source over a broad, flat, thin area as noted.

Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Assouline et al. (US 4,088,400) in view of Eberhardt (US 4,229,783) and further in view of McDonald (US 5,066,108).

Per claim 3: Assouline has a first $\lambda/4$ retarder disposed between the front polarizer (22) and the light diffusing element (4) (Figure 1, $\lambda/4$, 61) and a second $\lambda/4$ retarder disposed between the light diffusing element (4) and the polarizing element (23) (Figure 1, $\lambda/4$, 62).

Assouline does not appear to explicitly specify the precise relationships between slow axis of the first retarder with respect to the front polarizer and the slow axis of the second retarder with respect to the first retarder; however, Assouline does teach the need for the orientation of the wave plate slow axis with respect to that of the polarizer to be about 45 degrees (column 3, lines 50-68, entire patent). Furthermore, McDonald teaches that it is preferred to have retarders having fast and slow axes oriented at 90 degrees relative to each other and a linear polarizer to have a vertical transmission axis for wideband image sources (column 2, lines 59-68 and entire patent).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Assouline in view of McDonald for wideband image sources.

Art Unit: 2871

Claims 5, 6, 8, and 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Assouline et al. (US 4,088,400) in view of Eberhardt (US 4,229,783) and further in view of Mukai et al. (JP-02-079826).

Per claims 5, 6, 8, and 11: Assouline teaches that the plate of liquid crystal can be constituted by some suitable crystalline solid, thin liquid crystal film, cholesteric, smectic, or nematic, can employ an electro-optical effect, such as double refraction, rotary power, or dynamic scattering (column 2, lines 21-25). Assouline does not appear to explicitly specify that the liquid crystal display panel can be guest-host; however, Mukai teaches the use of guest-host liquid crystal for the purpose of improving contrast and for improving the brightness of a screen (PAJ). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Assouline in view of Mukai for a guest-host liquid crystal display that improves contrast and that improves brightness of the screen.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (703)305-7009. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (703) 305-3492. The fax phone number for the organization where this application or proceeding is assigned is (703)746-8741.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Jeanne Andrea Di Grazio

Robert Kim, SPE

JDG

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